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NPIC/TDS/D-920-67
5 July 1967

MEMORANDUM FOR: Deputy Chief, Development Staff, TDS

THROUGH : Chief, Support Systems Branch, DS, TDS

SUBJECT : Evaluation of Special Drying Techniques
[redacted] Trip 25X1

1. On 28 June a trip was made to Los Angeles, California, to observe a breadboard microwave dryer that was fabricated by the [redacted] The dryer was conceived by [redacted] 25X1 25X1

2. The breadboard equipment consisted of a film transport system, the microwave dryer, a microwave generator, and a controller. The transport system was somewhat makeshift and malfunctioned several times. However, this inconvenience did not prevent the microwave dryer from demonstrating its ability to dry materials. The dryer was cylindrical in shape, about 18 inches in diameter and was capable of drying 8 3/4 inch wide material. The material took a 180° wrap around the dryer and was supported by a cushion of air. A single conductor (illuminator) was folded upon itself many times to form a serpentive structure. The geometry and frequency of the supplied power produced a "brickwork" pattern of heat that encompased the surface of the dryer. This pattern is demonstrated by the attached sheet of diazo paper which was placed in a stationary position on the dryer. The diazo salts turned dark on the areas exposed to the heat. The dryer used a 2.5 KW Magnatron generator that produced a frequency of 2450 megacycles per second. The generator measured 18 inches by 24 inches by 15 inches high.

3. Film, paper, and photographic paper were dried during a demonstration of the equipment. Samples of the materials dried are attached to this memo. The photographic paper was dried at about six feet per minute and the film at about 20 feet per minute.

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The photographic paper sheet and the paper sheet were transported over the dryer by using film as a carrier.

4. [redacted] stated that RFI and radiation emissions were low. I was impressed by their technical competence in the field of microwave drying. The fact that they demonstrated the ability of their breadboard to dry various materials in continuous and cut form has given me confidence in the applicability of microwave drying to building requirements. 25X1

[redacted] 25X1
Development Staff, TDS

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